

BOOK REVIEW

BUNKER, JOHN P., BARNES, BENJAMIN A., and MOSTELLER, FREDERICK: *Costs, Risks, and Benefits of Surgery*. New York, Oxford University Press, 1977. 416 pp. 40 illustrations. \$22.50.

This book is of great significance for the medical profession, which should ponder it very seriously and study it with great care. It is written primarily for health-care managers and health administrators in that it relates operative procedures to cost and benefits from an economic viewpoint. Decision analysis is described whereby all the possible factors are discussed that one should ordinarily take into consideration for an intelligent decision. The authors are very aware, however, that many times in medicine, particularly in surgery, all these decisions cannot be based purely on cost analysis because the patient "always wants the best for himself." The authors make a very fine case of the extremely costly procedures that result in very limited benefit to the patient. They make a very interesting comparison in relation to herniorrhaphies—whether they should be performed on patients with short life spans as compared with young people with long life spans. They are also very aware that there is a social cost factor, and they break down various surgical procedures versus the costs for given disease entities.

In the chapter on the Treatment of Breast Cancer they cost-analyze the two major procedures commonly used today—simple mastectomy versus radical mastectomy. They prove, however, from a cost-effective standpoint, that simple mastectomies are more effective. They came to this conclusion by estimating the number of days that a patient will be hospitalized, calculating costs following the surgical procedure, and comparing this to the end results of how much longer the patient will live after a radical mastectomy, with its extended hospital stay and therefore cost. They also point out that serious consideration must be given to future planning in medicine and surgery because national health insurance will be upon the American public shortly. We must, in the medical profession, learn to be more socially cost conscious and realize that every patient should not be given the same operative procedures if less costly alternatives with the same results are available.

They point out quite eloquently in many chapters that the individual patient does not pay for the cost of an operative procedure, but the cost is borne by the

United States population at large in the form of taxation and health-insurance premiums. The authors cite as an example that if an operation costs \$35,000 the patient is charged only the amount of his premium, while the rest of the population in the United States pays the remaining cost.

In the chapter on Surgical Decision Making the authors point out that the mortality rate of various operative procedures is not the sole factor in determining the economic value of the operation.

A chapter concerning Surgical Innovations by Trial and Error is most interesting, as the authors point out that a few years ago gastric freezing was commonly used in patients to control upper gastrointestinal bleeding secondary to ulcer formation. Before this modality was really given a solid trial, many hospitals throughout this country bought expensive machines and then, in a short seven-year period of time, to the credit of the medical profession, the entire procedure was discarded. They also point out that tying off the internal mammary artery for coronary artery disease was popular for a short time until it was found wanting in regard to longevity and quality of life and then discarded. They point out that it is difficult from a moral standpoint to do sham operations when another operative procedure will give better results.

In many chapters the authors discuss the relative merits of the quality of life after operative procedures in relation to their cost-effectiveness, and they also ask whether this prolongation of life is a happy period of time. The authors ask seriously if it is worthwhile to subject a patient to the operative procedures that are available and for the family to become burdened with the care of the patient when the quality of life is not going to be very pleasant, especially when there are added costs for hospitalization, including the operation fees.

Since the book constantly discusses cost containment, it may be for economists and health planners rather than for the medical profession *per se*. However, the medical profession, and particularly surgeons and the professors in the academic world, should pay close attention to these authors because they are very knowledgeable and very profound in their thinking. One fears that they reflect what is in store for the American surgeon in the future.

Many chapters talk about the assessment of costs and the risks and benefits of established procedures. Some chapters give the pros and cons of the benefits and costs for elective procedures, such as herniorrhaphies, and whether they should be delayed until the hernia becomes incarcerated or strangulated, whereby many hundreds and thousands of patients would not be operated upon, and would thus decrease the cost of medicine today and not

interfere with the quality of life of those patients who were denied the operative procedure.

Another chapter discusses the Value of Elective Cholecystectomy for Silent Gallstones. It is the authors' impression that elderly patients with silent gallstones should be operated upon but in young and middle-aged people the authors do not believe, from a cost-effective standpoint, that a cholecystectomy should be undertaken for silent gallstones. This chapter is very well written, as are most of the chapters, and it brings home a very salient point which many of our medical colleagues are constantly reiterating—that not all patients with silent gallstones require surgical intervention.

The chapter on Elective Hysterectomy is very thought-provoking and well written, and really tells us the facts as they are—that far too many hysterectomies are performed in the United States for very questionable surgical indications—a chapter to be read by all gynecological surgeons.

In another chapter, on the Indication for Surgical Treatment of Suspected Acute Appendicitis, the authors make a cost analysis of the various component parts of decision making and what could take place in a patient with suspected acute appendicitis. If the surgeon operated upon the patient immediately, the cost factor is determined by calculating the number of days the patient is in the hospital, whether or not disease is found in the appendix or, if a ruptured appendix is found, comparing the mortality and morbidity rate of the procedure as compared with a case where the surgeon waited a few hours before making a decision as to whether the patient should be operated upon. According to the authors, it makes little difference whether indications are present that the patient does have acute appendicitis. But, once again, if the main thrust was cost analysis, this would be a great benefit, because many patients would be discharged within 24 hours of hospitalization for suspected acute appendicitis rather than be subjected to a six-or-seven-day stay in the hospital with great expense and very little benefit, particularly if the operation revealed a normal appendix.

The chapter on the Treatment of End Stages of Renal Disease was most enlightening. The authors describe a series of patients with end stages of renal disease and indicated which treatment was best suited for these patients. They then determined the cost and effect of home-dialysis treatment, hospital-dialysis treatment, transplant from a human source, and transplant from a cadaver. They point out that if a patient is a candidate for hospital dialysis the yearly cost for an individual patient is in the range of \$35,000. However, the most cost-effective treatment is one which subjects the patient to less hos-

pitalization and, thus, economically this is the best procedure. The authors point out that these living donors are the hardest to obtain because of the need for tissue cross-matching these kidneys with those of the recipients. This chapter again points out that if health managers and planners are to decide which therapy the patient should be given, the entire decision will be on a cost-factor and not a humanitarian basis.

A very interesting chapter deals with Coronary Artery Bypass Surgery, wherein the authors can find no proof in the literature that at the present time this procedure prolongs the life of the patients subjected to the procedure, and they seriously doubt that the quality of life is improved. There are at the present time no sham operations performed in patients with this disease as there are for other conditions. In their conclusion the authors state their belief that coronary artery surgery is effective or necessary in most of the cases where it is performed today, and they need more proof that the quality of life will be improved after this operation. But the authors believe that the quality of life possibly will be improved if the operation is performed on patients with two or three diseased vessels rather than on patients with symptoms of angina where an arteriography has demonstrated only one blocked coronary vessel.

This book has a chapter titled End Result: Quality of Life, which discusses morbidity-mortality versus costs, age of patient, quality, and longevity of life. They try to correlate these various components with the most efficient way a patient should be managed from a pragmatic standpoint, from a health-planning position, and from an economic-cost point of view. This chapter is excellent; but one thing that is very difficult for a practicing surgeon to understand is how one makes these decisions while the patient is in the office or in the hospital or in consultation with the surgeon, because one cannot always predict accurately the longevity and quality of life after any given procedure after the mortality rate is discarded. However, in the future these problems will have to be taken under serious consideration if the gross national product for health care is not to be extended further than it is at the present time.

The authors believe that cost effectiveness should be taught in the medical schools so that the future physician will be more conscious that there is something more to medicine than just a doctor-patient relation. This would be a very effective way to deal with this problem if the premise were better understood by the medical profession, but there could be tremendous difficulty in implementation of this educational philosophy because of the idealistic attitude of medical students, who generally believe that they, as physi-

cians, can save all patients' lives and that cost is no factor. However, it would be worthwhile to convince curriculum committees in medical schools to include this subject in their courses.

The entire book can be summed up as saying that resources for medical care are limited because there are other pressing national needs, and medical care cannot continue to be a high percentage of the gross national product. We must have a rational national health plan if we are to provide good quality care for the patients who are the beneficiaries of such care.

A national health plan most likely will be developed and the medical profession should be an integral part of its planning, but we must learn that cost-effectiveness must be an important, integral part of any plan that may emanate from the Congress.

All in all, this book is most informative, but for the medical profession there are too many economic factors and too many formulas really to understand the significance of all the statements. The book is wholeheartedly recommended for academic people as well as for health planners and medical students. It is important that students realize the type of profession they are entering after their training is completed.

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